REMARKS

A Response to the last Office Action was due by April 11, 2005. A Request for a Two-Month Extension of Time and the related fee are enclosed. Accordingly, this Response is timely filed.

Reconsideration of this application, as amended, is respectfully requested. By this Amendment, the specification is being revised to explicitly state what was clearly shown in original Figures 1a to 1c, i.e. that, after implantation, the inner area 6 is weakly p-doped just like the weakly p-doped semiconductor substrate 1. The addition of "new matter" has been scrupulously avoided. Claims 1-27 and 29-31 remain in this case.

In the last Office Action, claims 1-27 and 29-31 were rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. More particularly, it was asserted that there is no description in the disclosure as originally filed of "the p-doped or n-doped inner area having a same doping concentration as the starting semiconductor substrate". This rejection, to the extent that it is deemed applicable to the application, as now presented, is respectfully but most strenuously traversed.

Applicants submit that there is reasonable support for the quoted expression in the original description and drawings. The original specification discloses that the n-doped trough is produced by high energy implantation in a preferably weakly p-doped semiconductor substrate. The ion implantation is done using an energy that assures that a p-doped inner area remains on the surface of the semiconductor substrate (see page 1, last paragraph, of the specification). In other words, the p-doped inner area has the same doping concentration as the starting semiconductor substrate, i.e. a preferably weak doping concentration. Figures 1a to 1c show the steps of producing the n-doped trough in the p^--doped semiconductor substrate. The doping concentration of the semiconductor substrate is designated with "p^-", i.e. a weak p-concentration. Figures 1a to 1c further show that the inner area 6 has the same doping concentration, i.e. a weak p-concentration (p^-). These original figures clearly show that the inner area 6 and the starting semiconductor substrate have the same doping concentration.

The related text in the last paragraph on page 5 has been amended to expressly describe inner area 6 as weakly p-doped in accordance with original Figures 1a to 1c. Accordingly, Applicants believe that this feature is now described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

With respect to Figures 1 and 2 submitted with the Amendment filed October 20, 2004, Applicants believe that the Examiner's objections are based on a misunderstanding of these figures.

The Examiner states that Figure 2 shows zero concentration of dopant at depths up to about 1 micron when using an energy of 6 MeV. Please note that Figure 2 shows a concentration of $1x10^{14}$ [cm^{-3}] at depths up to about 1 micron rather than zero concentration of dopant. The Examiner further states that Figure 1 shows non-zero concentration for a lower dose implantation at the above energy. Applicants note that Figure 1 shows non-zero concentration for a higher dose implantation ($1e15cm^{-2}$) than that ($2.5e13cm^{-2}$) of Figure 2. On the other hand, Figure 2 refers to lower dose implantation rather than higher dose implantation, as incorrectly indicated by the Examiner. Thus, Figures 1 and 2 can be reconciled, and are supportive of Applicants' contentions.

The Examiner also refers to Figures 2 and 3 of newly cited Cheung et al. which show results for P implantation at energies below and above 6 MeV. These figures merely show the doping concentration as a function of the depths with different implantation energies. Figures 2 and 3 are devoid of any teaching or suggestion of using a mask for the production of the buried layer in question. Furthermore, Figures 2 and 3 are devoid of any teaching or suggestion to use a semiconductor of such structure with the buried layer as produced by the method according to the present invention for the production of integrable semiconductor components.

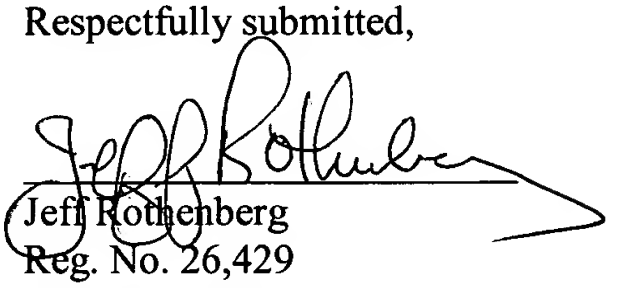
Applicants wish to draw the Examiner's attention to the fact that the present invention is directed not only to the production of the buried layer in the semiconductor substrate but also to the use of the semiconductor structure with the buried layer enclosing an inner area having the same doping concentration as the starting substrate, for the production of semiconductor components. The benefits of using the present invention, as compared to the prior art technique, for this purpose, is described in the attachment to this amendment.

Finally, Applicants note that no prior art has been applied against the pending claims.

For all of the above reasons, this application is believed to be in condition for allowance, and such action is respectfully requested.

If it would aid in the prosecution of this application, the Examiner is cordially invited to contact Applicants' representative at the below indicated telephone number.

Respectfully submitted,



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